

## Nicholas C. Metropolis Postdoc Fellow

Selected candidates will have the opportunity to use some of the most powerful supercomputers in the world to perform pioneering research in these disciplines:

- Research into complex, multi-physics, integrated numerical simulations and algorithms, including efficient use of advanced architectures for multi-physics codes.
- Development, validation, and incorporation of new physics and engineering models for integrated codes. These models include research into fluid mechanics, turbulence, microscopic and macroscopic models of material properties, warm dense matter, high explosives, plasma, nuclear, and atomic physics, and the transport of particles and x-rays.
- Development and application of fundamental physics codes to investigate relevant physics phenomena in these disciplines, including efficient use of advanced architectures.
- Verification and validation methodology and application, including development of a technically rigorous foundation to assess the confidence of simulation code results.
- Computer science and system development, including emerging technologies and investigation of advanced architectural concepts, system software, programming models, advanced storage and networking technologies, system and application resiliency, and numerical algorithms; system and application co-design for emerging technologies.

